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Synopsis of the *Orthomus rubicundus* group with description of two new species and a new subspecies from Morocco and Algeria (Coleoptera, Carabidae, Pterostichini)

D.W. WRASE & C. JEANNE

Abstract: *Orthomus starkei* spec. nova (type locality: Morocco, Taza Province: ca. 5 km S Sebti-des-Beni-Frassèn, 30 km NW Taza, 34.20N/04.22W), *Orthomus tazeekensis rifensis* subsp. nova (type locality: Morocco, Chefchaouen Province: Rif Mts., Bab-Besen, ca. 15 km NW Ketama, ca 1600 m) and *Orthomus achilles* spec. nova (type locality: Algeria, Bejaïa Wilaya: Aokas, ca. 20 km SE Bejaïa) are described. Comparisons are made to species of the *O. rubicundus* group from northern Africa and southernmost Andalucia. A key for distinguishing the species is given, the main characters are mentioned and the localities of the examined material are listed. Illustrations of the habitus and the median lobes of the species dealt with here and a table with variation of values of some ratios are presented.

Key words: Coleoptera, Carabidae, Pterostichini, *Orthomus*, new species, new subspecies, key, Morocco, Algeria, Tunisia, southern Spain.

Introduction

The genus *Orthomus* CHAUDOIR 1838 contains about 20 species being rather similar in structure and shape, occurring in the Mediterranean from the Canaries in the west to the Near East. All species are micropterous with elytra mostly fused at the suture, some of them form more or less well-differentiated subspecies. Among them there is a group of species from northern Africa with one species occurring also in southernmost Andalucia, which are characterized by some morphological features (eyes very flat, with longer tempora and with metepisterna as long as wide or only a little longer than wide and only very weakly narrowed toward behind), contrary to the species group which members have eyes very convex with shorter tempora and metepisterna, which are either distinctly longer than wide and strongly narrowed posteriorly or also short. The latter is true in *O. aubryi* JEANNE 1974, *O. hispanicus* (DEJEAN 1828) and *O. perezii* (MARTÍNEZ Y SAEZ 1873), all from the Iberian Peninsula, but these species have very convex eyes.

A thorough revision of the genus *Orthomus* is still required, therefore we are currently unable to determine whether the above mentioned characters (eyes very flat, with longer tempora) are an autapomorphy for this species-group, evolved in its ancestor (that would mean it would be monophyletic) or is a result of homoplasy in different development lines and based on more than one ancestor. For that reason it is also unclear if the species with short metepisterna but convex eyes (*O. aubryi*, *O. hispanicus* and *O. perezii*), be-

long into this group, or not. For that reason we do not include them in this synopsis, which deals with a group of species, referred to as the "*O. rubicundus* group", which consists, up to now, of five species: *O. rubicundus* (COQUEREL 1859) from northern Algeria and northern Tunisia, *O. aquila* (COQUEREL 1859) from the central part of northern Algeria, *O. lepieuri* PIC 1894 from north-eastern Algeria and north-western Tunisia, *O. tazeekensis* (ANTOINE 1941) from the Jbel Tazzeke (Moyen Atlas) and the Rif in Morocco and *O. maroccanus* (CHAUDOIR 1873), occurring in northern and western Morocco and in southernmost Andalusia.

Recent explorations in northern Morocco, in the area northwest of Taza, yielded the discovery of specimens, belonging to this species group. Comparison with representatives of all known species of this group including their descriptions showed that they represent a species previously unknown to science, which will be described in this paper. Additionally the investigation of two specimens of one species from Algeria resulted in the recognitions of another undescribed species too, increasing the number of species to seven. Further, members of the populations of *O. tazeekensis* from the Rif mountains are found to be different in some characters, suggesting subspecific rank.

We present a key for the identification of the species, followed by a synopsis of the species in question including main characters, distribution, listing of examined material and a table with data on variation in some body ratios.

The genus *Orthomus* is regarded in the sense of MATEU (1954b), who considered the following taxa with sternites not or not all furrowed (in the latter case furrows not complete), as distinct genera: *Eutrichopus* TSCHITSCHÉRINE 1897 (elytral apex distinctly semicircular, tarsi on upper side pubescent, endemic to Tenerife), *Nesorthomus* BEDEL 1899 (body very short, only one pronotal base impression, endemic to Madeira). SCHATZMAYR (1942), regarding some taxa, including *Orthomus* as subgenera of *Pterostichus* BONELLI 1810, argued *Eutrichopus* to be a valid genus. Previously (BOUSQUET 2003) regarded these taxa and additionally *Trichopedius* BEDEL 1899 (tarsi on upper side pubescent, endemic to Algeria), *Wolltinerfia* MACHADO 1985 and *Gietopus* MACHADO 1992, described as subgenus of *Wolltinerfia* (eyes reduced or absent, endemic to Tenerife) as subgenera of *Orthomus*. But some of the characters mentioned above, are very striking, suggesting autapomorphies for these taxa, hence probably warranting genus level, this is supported by taking into account their distribution. Further investigations should elucidate their proper range and the true affinities to each other.

Material

Material examined is housed in the collections of institutions or in private collections as listed below:

- DEI Deutsches Entomologisches Institut, Müncheberg, Germany (L. Zerche, M. Behne)
 MNHN Museum National d'Histoire Naturelle, Paris, France (Th. Deuve)
 MNHUB Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (M. Uhlig, B. Jaeger)
 OÖL Oberösterreichisches Landesmuseum/Biologiezentrum, Linz, Austria (F. Gusenleitner)
 OUMNH The Hope Entomological Collections, Oxford University Museum of Natural History (Darren Mann)
 ZISP Zoological Institute, Russian Academy of Sciences, St. Petersburg (B. Kataev)

cASM	Coll. Th. Aßmann, Lüneburg, Germany
cFACCH.....	Coll. S. Facchini, Piacenza, Italy
cJNE	Coll. C. Jeanne, Langon, France
cCAS	Coll. A. Casale, Sassari, Italy
cEGG.....	Coll. M. Eggers, Wattens, Austria
cFER.....	Coll. J. de Ferrer, Algeciras, Spain
cGIACH	Coll. P.M. Giachino, Torino, Italy
cGOUR.....	Coll. J. Gourvès, Los Masos, France
cHEYD.....	Coll. L. von Heyden (in DEI)
cHZ.....	Coll. W. Heinz, Schwanfeld, Germany
cKAL.....	Coll. J. Kaláb, Kuřim, Czech Republic
cMUIL.....	Coll. J. Muilwijk, De Bilt, Netherlands
cORT	Coll. V.M. Ortuño, Alcalá de Henares, Spain
cPOOT.....	Coll. P. Poot, Maastricht, Netherlands
cREUT.....	Coll. Ch. Reuter, Hamburg, Germany
cSCI.....	Coll. R. Sciaky, Milano, Italy
cSCHM.....	Coll. J. Schmidt, Rostock, Germany
cSCHN	Coll. P.H. Schnitter, Halle, Germany
cSCHW	Coll. A. Schwarz, Berlin, Germany
cSER.....	Coll. A. Sermet, Yverdon, France
cST.....	Coll. W. Starke, Warendorf, Germany
cTES.....	Coll. F. Tessier, Marmande, France
cTH.....	Coll. A. Thilliez, Saint-Georges-de-Commiers, France
cTRO	Coll. M. Tronquet, Molitg les Bains, France
cVIV	Coll. J. Vives Durán (in Coll. E. Vives Durán, Terrassa, Spain)
cWR	Coll. D.W. Wrase, Berlin, Germany

Methods and Acknowledgements

Total body length (BL) is measured from the tip of the labrum to the apex of the right elytron; the width of the head (HW) as the maximum linear distance across the head, including the compound eyes; the length of the pronotum (PL) from the anterior to the posterior margin along the midline; the length of the elytra (EL) from the tip of scutellum to the apex of the right elytron; the width of the pronotum (PW) and elytra (EW) at their broadest point; the width of the pronotal base (PBaW) between the tip of the hindangles.

These measurements, made at a magnification of 12.8X and using an ocular micrometer in a SM 20 stereobinocular microscope (Carl Zeiss Jena), were combined in ratios or added as follows:

PW/PL: width /length of pronotum;

PW/HW: width of pronotum /width of head;

PW/PBaW: width of pronotum/width of the pronotal base;

EL/EW: length/width of elytra;

EW/PW: width of elytra/width of pronotum.

Microsculpture was examined at a magnification of 100X.

Line drawings were prepared by using an ocular grid (15X15 squares) attached to a SM

20 stereobinocular microscope. Dissections were made with standard techniques; genitalia were preserved in Euparal on acetate labels, and pinned beneath the specimens from which they had been removed.

The study is based on examination of 140 specimens of *O. maroccanus*, 81 specimens of *O. rubicundus*, 16 specimens of *O. starkei* spec. nova, 88 specimens of *O. aquila*, 2 specimens of *O. achilles* spec. nova, 15 specimens of *O. leprieuri*, as well as 6 specimens of *O. tazekeensis tazekeensis* and 201 specimens of *O. tazekeensis rifensis* subspec. nova. If possible, 5 ♂♂ and 5 ♀♀ of every species were used for measurements to yield the above-mentioned ratios (For exceptions see Table 1).

Geographical names (names of cities and districts or provinces and names of geographical units in Morocco, Algeria and Tunisia) are taken from: Michelin, Carte Routière et Touristique: Maroc, map 969, Paris, 1989; Algeria-Tunisia, map 972, Paris, 1988.

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Results

Key to species of the *Orthomus rubicundus* group

- 1 Second (hind) setigerous puncture on elytra adjoining stria 3. Apical lamella of median lobe apically evenly narrowed (Figs 1b-5b)..... 2
- Second (hind) setigerous puncture on elytra adjoining stria 2. Apical lamella of median lobe apically distinctly shifted to the left (Figs 6b-8b) 5
- 2 Both basal impressions of pronotum distinct, more or less strongly punctured. Elytra in ♀♀ markedly dull due to strong isodiametric microsculpture mesh pattern, ♂♂ fairly shiny. Mesotibia of ♂♂ distinctly enlarged from middle to apex, metatibia slightly, but distinctly curved. Northern and western Morocco, southernmost Andalusia *O. maroccanus* (CHD.)
- Basal impressions of pronotum not strongly punctured, smooth or only with some irregular punctures, outer impression small, shallow or only suggested. Elytra in ♀♀ only somewhat dull due to less strong microsculpture mesh pattern, ♂♂ fairly shiny. Mesotibia of ♂♂ simple, not enlarged from middle to apex, metatibia not distinctly curved 3
- 3 Anterior angles of pronotum very acute, only rounded at tip, markedly produced forward (Figs 12, 13). Mesotibia in ♂♂ crenulate at internal margin. Humerus with large tooth, laterally somewhat projecting. Pronotum only slightly narrowed towards base (Morocco: Jbel Tazzeke in the Moyen Atlas and Rif) *O. tazekeensis* (ANT.)
- Anterior angles of pronotum moderately acute and only moderately produced forward (Figs 10, 11). Mesotibia in ♂♂ not crenulate at internal margin. Humerus with small tooth, laterally not projecting. Pronotum distinctly narrowed towards base 4
- 4 Sides of pronotum evenly rounded or, shortly before posterior angle, straight, lateral furrow narrow (Fig. 10). Antennomere 3 apically unisetose (except normal longer apical setae). Area between external pronotal impression and lateral margin distinctly elevated (at least in members of populations from the eastern range, elevation in members of populations from the western range sometimes indistinct). Smaller, 7.0-8.6 mm. Northern Algeria, northern Tunisia..... *O. rubicundus* (COQU.)

- Sides of pronotum towards posterior angles slightly but distinctly sinuate, lateral furrow wider (Fig. 11). Antennomere 3 apically with some fine setae (except normal longer apical setae), sometimes difficult to observe. Area between external pronotal impression and lateral margin flat. Larger, 7.8-9.2 mm. Morocco: north-western Taza region..... *O. starkei* spec. nova
- 5 Pro- and met-episterna and abdominal sternites unpunctured, only mes-episterna with some single punctures. Anterior angle of pronotum only slightly produced forward (Fig. 16). Elytral microsculpture mesh pattern in ♀♀ weakly developed with meshes strongly transverse, surface somewhat shiny and iridescent. North-eastern Algeria and north-western Tunisia..... *O. lepreuri* PIC
- Episterna coarsely and first abdominal sternites laterally finely and scatterly punctured. Anterior angle of pronotum distinctly produced forward (Figs 14, 15). Elytral microsculpture mesh pattern in ♀♀ more strongly developed, almost isodiametric, surface somewhat dull in comparison to previous species.....6
- 6 Elytral interval 8 behind humeral tooth in ♂♂ elevated almost keel-like, abruptly descending toward lateral margin, in ♀♀ this feature less distinct. Pronotum (Fig. 14) laterally before posterior angles almost parallel or even somewhat broadened. Median lobe (Fig. 6) apicad slightly narrowed with apical lamella longer (dorsally seen). Central to eastern part of northern Algeria..... *O. aquila* (COQU.)
- Elytral interval 8 behind humerus in ♂♂ and ♀♀ moderately convex and curvature toward lateral margin moderate. Pronotum (Fig. 15) laterally before posterior angles weakly rounded or almost rectilinear, slightly narrowed. Median lobe (Fig. 8) apicad not distinctly narrowed with apical lamella shorter (dorsally seen). Eastern part of northern central Algeria..... *O. achilles* spec. nova

Classification

Orthomus maroccanus CHAUDOIR 1873

Orthomus maroccanus CHAUDOIR 1873: 108 (loc. typ.: "Tanger").

Platysma (Orthomus) maroccanum: BEDEL 1899: 193.

Pterostichus (Orthomus) maroccanus: SCHATZMAYR: 1942: 67.

Orthomus maroccanus: MATEU 1954a: 361.

Orthomus maroccanus: ANTOINE 1957: 208.

Orthomus (Orthomus) maroccanus: BOUSQUET 2003: 477.

Distribution: Southernmost Andalusia (ZABALLOS & JEANNE 1994: 70; SERRANO 2003: 45); north-western Morocco: From Rabat to western Rif mountains (ANTOINE 1957: 208).

Material: (140 exs.):

M o r o c c o: "Marocco Quedenf." (2 exs., DEI). "MAROC Vaucher" (2 exs., DEI). "Marocco (Haag)" (1 ex., cHEYD). - Chefchaouen: Arbaoua-Fokra, 13.III.1968, J. Gourvès leg. (2 exs., cJNE). Dardara, ca. 8 km S Chefchaouen, ca 400 m, 35°06.092'N/005°16.592'W (fallen land/pasture), 29.II.2004, Wrase leg. (2 exs., cWR). Ouazzane, J. Gourvès leg. (3 exs., cGOUR). N Ouazzane, Lapin leg. (1 ex., cGOUR). Jbel Jebala N Ouazzane, 13.II. 1968, D. Seiler leg. (6 exs., cJNE). Fifi, 24 km S Bab Taza, 16.V. 1964, P. Jolivet leg. (2 exs., cJNE). Rif Mts., 10 km NW Bab-Taza, 700 m, 35°04.031'N/005°14.193'W (stony pasture on former field), 29.II.2004 Wrase leg. (4 exs., cWR); same data, but: W. Starke leg. (1 ex., cST). Rif mts., Bab-Berret, mixed forest, 28.xi.2002, J. Kaláb leg. (2 exs., cKAL). Rif mts., Bab-Berret, 1250 m, I 1981, Czipka leg. (3 exs., cKAL). Rif Mts., Bab-Taza, 850 m, 22. VI.1990, C. Jeanne leg. (1 ex., cJNE). Rif Mts., between Bab-Berret and Bab-Taza, 850 m, 6.IV.1991, W. Heinz leg. (3 exs., cHZ). Rif Mts., Souk-el-Arba-des-Beni-Hassan, S env. pass, ca. 500 m (cultivated land) 14.II.2003, D.W. Wrase leg. (2 exs., cWR). Rif Mts., Tleta-des-Beni-Ydar-Cherki, 15 km SW Zinat, 570 m (cultivated land) 14.II.2003, Wrase leg. (1 ex., cWR). Rif Mts., Tleta-des-Beni-Ydar-Cherki, 15 km SW Zinat, 570 m (mixed oak forest, leaf litter, sifted) 14.II.2003, Wrase leg.

(1 ex., cWR). Rif Mts., ca. 2 km N Zoumi, pass, 650 m (fields/pasture) 11.II.2003, Wrase leg. (2 exs., cWR). Rif Mts., Zoumi, ca. 300 m (cultivated land) 10.II.2003, Wrase leg. (2 exs., cWR). - Kénitra: Kénitra, A. Sermet leg. (2 exs., cSER). Mechra nr. Ksiri, 26.I.1964, P. Jolivet leg. (1 ex., cJNE). Forêt de la Marmora, Oued Fouarat, 12.VI.1960, Pruja leg. (2 exs., cJNE). - Meknès: Khemisset, Oued Beth, 29.X.1966, P. Jolivet leg. (1 ex., cJNE). - Rabat: Oued Yquem nr. Rabat, (1 ex., cGOUR). - Tanger: "Tanger Dieck" (2 exs., cHEYD). "Tanger Rolph" (3 exs., DEI). Tanger env., IX 1993, Blümel leg. (1 ex., cWR). Tanger, 7.XII.1997, T. Lackner leg. (1 ex., cFACCH); Tanger, P. Kanaar leg. (1 ex., cMUIL). Al-Hakkama, 18 km SE Tanger, ca. 100 m (fields, fallow land, pastures) 16.II.2003, Wrase leg. (1 ex., cWR); same data, but: 26.II.2004, W. Starke leg. (1 ex., cST). 10 km S Asilah, 6.III.1966, P. Jolivet leg. (1 ex., cJNE). N Pont Mohammed V, SW Tanger, 35°38.925'N/005°58.274'W (shore of salt lake), 1.III.2004, Wrase leg. (1 ex., cWR). Cap Malabata nr. Tanger, 5.III.1966, P. Jolivet leg. (2 exs., cJNE). - Tétouan: "Tétuan" (1 ex., DEI). Tétouan, S. Blanca leg. (1 ex., cJNE); Tétouan, 23.IV.1964, P. Jolivet leg. (1 ex., cJNE); Tétouan, Valdinazzi leg. (1 ex., cGIACH). 4 km SW Tétouan, P. Kanaar leg. (1 ex., cMUIL). El Biutz, S Jbel Musa, ca. 350 m (lime stone massif) 16.II.2003, Wrase leg. (4 exs., cWR). Jbel Musa, 300 m, 35°53.090'N/005°24.389'W, 25.II.2004, W. Starke leg. (2 exs., cST). Embouchure of Oued Hajera, ca. 4 km E Tétouan (fields, fallow land, ruderal) 15.II.2003, Wrase leg. (1 ex., cWR). Larache, J. Gourvès leg. (2 exs., cGOUR). Road Tétouan - Larache, km 76, 16.II.1999, Wrase leg. (2 exs., cWR). Mdiq nr. Tétouan, 29.V.1978, R. Weidner leg. (1 ex., cJNE).

S p a i n : Cádiz: "Algeciras 15.5.95" (1 ex., DEI); Algeciras, 24.IV.1921, Novellas leg. (1 ex., cJNE); the same without datas but: J. de Ferrer leg. (1 ex., cJNE). Embalse de Almodovar, M. Tronquet leg. (4 exs., cTRO). Barbat II 1943 (1 ex., cJNE). El Bujeco, A. Thilliez leg. (1 ex., cTH). Cortez de la Frontera, 36°36'N/105°25'W, 19.II.2000, A. Lompe leg. (1 ex., cWR). Facinas, F. Tessier leg. (1 ex., cTES). Jimena de la Frontera, 5.-6.VI.1991, Wrase leg. (3 exs., cWR). Palmones, 29.V.1991, Wrase leg. (1 ex., cWR). Puerto del Cabrito, 12.XI.1966, J. Vives leg. (3 exs., cJNE); the same but: 24.XI.1973, J. de Ferrer leg. (1 ex., cJNE); the same but: 30.XII.1978 (1 ex., cJNE). Puerto de Galiz, J. de Ferrer leg. (1 ex., cFER), Puerto de Galiz, A. Thilliez leg. (1 ex., cTH). Punta Palomas, 5 km NW Tarifa, 20 m (shore, sand), 36°03'42"N/05°39'79"W, 9.IV.2001, Ch. Bayer leg. (1 ex., cWR). Rio Guadiaro, (NE Sotogrande), 31.V.1991, Wrase leg. (1 ex., cWR). San Roque, 28.V.-4.VI.1991, Wrase leg. (5 exs., cWR). San Roque, IV 1974, J. Ramirez leg. (1 ex., cWR), the same but: V 1965 (2 exs., cJNE), the same but: 6.X.1972, J. de Ferrer leg. (1 ex., cJNE), the same but: 12.X.1973 (1 ex., cJNE). Santuario Nuestra Señora de la Luz (7 km NNW Tarifa), 28.-29.I.1998, Wrase leg. (1 ex., cWR). Sierra de la Luna, J. de Ferrer leg. (1 ex., cFER). Valle de Ojén, 12.II.1996, P. Poot leg. (1 ex., cJNE). Tárfia, 25.IV.1992, Pagliacci leg. (1 ex., cFACCH), Tarifa, J.P. Zaballos leg. (1 ex., cJNE), the same but: VI.1990, P. Poot leg. (1 ex., cJNE), the same but: III 1991 (1 ex., cJNE), the same but: II 1997 (1 ex., cJNE), the same but: I 1999 (1 ex., cJNE). - Ceuta: Ceuta, V. Ortuño leg. (8 exs., cORT). Ceuta-Benitez, 6.I.1953, J. de Ferrer leg. (3 exs., cJNE). Ceuta, Monte Hacho, F. Bajet leg. (1 ex., cVIV). - Málaga: Manilva, I 1975, E. Taminiaux leg. (1 ex., cJNE). Estepona, III 1975, E. Taminiaux leg. (1 ex., cJNE). De Marbella à Fuengirola, 10.V.1964, P. Ardoin leg. (1 ex., cJNE).

W r o n g l o c a l i t i e s : "Algeria Cantener" (1 ex., cHEYD). "Algier." (1 ex., DEI).

D i a g n o s i s : A species of average size for *Orthomus*, 8.0-9.8 mm, dark piceous, appendages reddish. Antennae pubescent from apical third of antennomere 3. Habitus see Fig. 9.

Pronotum (Fig. 9) transverse with anterior angles moderately projecting forward, laterally regularly curved to obtuse posterior angles, ending in small acute tooth. Basal impressions strongly punctured, internal one longitudinal, external one distinctly and approximately triangularly deepened. Area between external impression and lateral margin distinctly elevated.

Prosternum unpunctured, only with micropunctuation, episterna and abdomen more or less distinctly punctured, the punctures on abdomen sometimes connected by shallow longitudinal ridges.

Elytra (Fig. 9) moderately convex with striae fine, unpunctured, intervals slightly convex, interval 3 with two setigerous punctures adjoining stria 3 (exceptionally a third puncture exists, this can be on both or only one side). Humerus well-marked with tooth, projecting laterally. (On specimens with indistinct humeral tooth ANTOINE 1957: 208 founded the unavailable aberration name "humeralis"). Scutellar setigerous puncture present at base of well-developed scutellary stria. Elytral microsculpture mesh pattern indistinct in males, weak transverse meshes weakly impressed, elytra shiny; in females microsculpture isodiametric and much more strongly developed, elytra strikingly dull.

Mesotibia of males distinctly enlarged from middle to apex, metatibia slightly curved and weakly crenulate at internal margin.

Apical lamella of median lobe apically equally narrowed (Fig. 1b), internal sac (Figs 1a, 1b) with macrotrichia, arranged in longitudinal direction.

For identification see also key. For data on variation in some values of ratios see Table 1.

Orthomus rubicundus (COQUEREL 1859)

Feronia (Argutor) rubicunda COQUEREL 1859: 769 (loc. typ.: "Bône" [Annaba, Algeria])

Feronia (Argutor) modica COQUEREL 1859: 770 (loc. typ.: "Bône" [Annaba, Algeria])

Orthomus minutus REICHE 1871: 427 (loc. typ.: "Greece" [error!])

Feronia monogramma CHAUDOIR 1859: 119 (loc. typ.: "Algier").

Orthomus rubicundus (= *monogrammus*): CHAUDOIR 1873: 109

Platysma (Orthomus) rubicundum: BEDEL 1899: 193.

Pterostichus (Orthomus) rubicundus: SCHATZMAYR: 1942: 68.

Orthomus rubicundus: MATEU 1954a: 360.

Orthomus (Orthomus) rubicundus ssp. *rubicundus*: BOUSQUET 2003: 477

Distribution: Northern Algeria, northern Tunisia (BEDEL 1899: 194; SCHATZMAYR 1942: 68; MATEU 1954a: 358).

Material: (81 exs.):

Algeria: "Alger. mer. Desbroch." (2 exs., cHEYD, vid. Bedel). - Algier: "Algier" (4 exs., DEI). "Algier, Lange" (7 exs., MNHUB); "Algier", "Coll. L.W. Schaufuß" (2 exs., MNHUB). - Annaba: "Bona Alg. Desbroch." (2 exs., cHEYD, vid. Bedel). "Mt. Edough Bona Alg. Desbroch." (1 ex., cHEYD, vid. Bedel). Zitouna (Medjerda), ~ 300 m, 3.III.1991, W. Heinz leg. (1 ex., cHZ). - Bejaïa: Kherrata, 17.VI.1980, G. Sama leg. (1 ex., cJNE). - Chlef: "Orléansville" (= Chlef, 2 exs., DEI). - Constantine: "Constantine" (5 exs., DEI). "Constantine Dieck" (1 ex., cHEYD, vid. Bedel). "Constantine (Bonvouloir)" (1 ex., cHEYD, vid. Bedel). "185", "Constantine" *, "Alg.", "Coqu."*, "rubicunda Fairm." (* = handwritten, probably by Coquerel, 1 ex., MNHUB). Djebel Ouasch, 15 km E Constantine, 26.III.1952, S. Battoni leg. (3 exs., cJNE). Col des Oliviers, 26.III.1952, S. Battoni leg. (1 ex., cJNE). - Guelma: Souk Ahras, 26.V.1980, G. Sama leg. (1 ex., cJNE). Mechroa (= Laverdure), V 1927, Balthasar leg. (1 ex., cJNE). - Skikda: "Philippeville Dieck" (=Skikda, 1 ex., cHEYD). - Sétif: Ouled Khebab at Bougaa, 1200 m, 7.III.1991, W. Heinz leg. (4 exs., cHZ). Kherrata N Sétif, ~ 750 m, 7.III.1991, W. Heinz leg. (6 exs., cHZ).

Tunisia: Béja: Béja, II 1947, R. Demoflys leg. (1 ex., cJNE). Nefza, 22.VI.1982, G. Sama leg. (1 ex., cJNE). Tabarka, Nefza, 25.I.2004, M. Egger leg. (3 exs., cEGG, cWR). - El Kef: El Kef, II 1945, R. Demoflys leg. (1 ex., cJNE). - Jendouba: Aïn Draham, III 1947, R. Demoflys leg. (3 exs., cJNE). Aïn Draham env., 2.V.2004, T. Lackner leg. (1 ex., cWR). Ben Metir, III 1947, Demoflys leg. (3 exs., cJNE). Fernana, X 1946, R. Demoflys leg. (7 exs., cJNE; 1 ex., cWR). - Nabeul: Oued Chiba nr. Korba, P. Kanaar leg. (1 ex., cPOOT). - Sousse: Bou Fichta, 18 km SW Hammamet, I.XII.1994, Wrase leg. (5 exs., cWR). El Besbassia, 10 km S Hammamet, 28.XI.-5.XII.1994, Wrase leg. (3 exs., cWR). - Tunis: "Tunis" (1 ex., cCAS). Sidi Tabet, II 1939, R. Demoflys leg. (2 exs., cJNE). - Zaghuan: Zaghuan, N. food of Jbel Zaghuan, 30.XI.1994, Wrase leg. (1 ex., cWR).

Wrong locality: "Sicilia" (1 ex., DEI).

D i a g n o s i s : A species of average size for *Orthomus*, 7.0-8.6 mm, reddish brown, appendages somewhat lighter. Antennae pubescent from antennomere 4. Habitus see Fig. 10.

Pronotum (Fig. 10) transverse with anterior angle moderately projecting forward, laterally regularly rounded to small almost rectangular posterior angle, or straightly narrowed shortly before angle (mainly in specimens from the western range), angle with a small acute tooth, projecting laterally. Basal impressions smooth or only slightly and finely punctured, internal one longitudinal, external one shallow, often only indicated. Area between external impression and lateral margin distinctly elevated (at least in members of populations from the eastern range, elevation in members of populations from the western range sometimes indistinct).

Pro- und mesosternum unpunctured, episterna unpunctured or only with some weak superficial punctures, abdomen (laterally) coarsely and with somewhat scattered and irregular puncturation, the punctures on abdomen sometimes connected by shallow longitudinal ridges.

Elytra (Fig. 10) slightly convex with striae fine, normally unpunctured, exceptionally less intensely punctured, intervals slightly convex, interval 3 with two setigerous punctures adjoining stria 3. Humerus well-marked with small, indistinct tooth, not projecting laterally. Scutellar setigerous puncture present at base of well-developed scutellary stria.

Elytral microsculpture in males weak, transverse, indistinct meshes, elytra very shiny; in females microsculpture isodiametric and only slightly more strongly developed.

Mesotibia of males not enlarged, metatibia not distinctly curved and not crenulate at internal margin.

Apical lamella of median lobe apically evenly narrowed (Fig. 2b), internal sac (Figs 2a, 2b) without teeth or thorns.

For identification see also key. For data on variation in some values of ratios see Table 1.

Orthomus starkei spec. nova

Type material: Holotype ♂: "MOROCCO (Taza), ca 5 km S Sebti-des-Beni-Frassèn (30 km NW Taza) 34.20N/04.22W, ca 300m (fallow land/fields with damming wetness, clay, und. stones) 4.II.1998 D.W. Wrase" (cWR). Paratypes: 1 ♂ with the same data as the holotype (cJNNE). 1 ♀ with the same data as the holotype, but: 6.II.2003 (Coll. Wrase). 1 ♀ with the same data as the holotype, but: 6.II.2003, W. Starke (cST). 1 ♂, 1 ♀ with the same data as the holotype, but 22.II.2004 (07) (cWR). 3 ♂, 1 ♀ with the same data as the holotype, but: 22.II.2004 Th. Abmann (07) (cASM). 1 ♀: "MOROCCO (Taza) ca 17 km SE Souk-El-Had-des-Oulad-Zbair (ca 30 km SE Tissa) ca 450m 34.14N/04.27W (field edges/ loam, clay, und. stones) 8.II.2003 D.W. Wrase (10)" (cWR). 1 ♀ with the same data, but: W. Starke (cST). 1 ♀ with the same data, but: 23.II.2004 D.W. Wrase (08) (cWR). 1 ♂ with the same data, but: Th. Abmann (cASM). 2 ♀: "MOROCCO (Taza) 1 km S Had Msila, E Marticha river (ca 22 km NW Taza) ca 550m (field edges, fallow land/pasture/loam, clay) 34°31.199'N/04°10.461'W 21.II.2004 D.W. Wrase (05)" (cWR).

D i a g n o s i s : A species of average size in *Orthomus*, lighter or darker reddish brown, easily to be distinguished from other species of this group by the pronotum distinctly sinuate before hind angles. Habitus see Fig. 11.

D e s c r i p t i o n : Body length 7.8-9.2 mm; width 3.0-3.6 mm (holotype 7.8 mm and 3.0 mm, respectively).

Colour: Lighter (holotype and some paratypes) or darker reddish brown, appendages only somewhat or hardly lighter than body.

Head small, narrower than pronotum, covered with a very fine micropunctuation. Frontal furrows short, unpunctured and not deeply impressed. Eyes fairly flat with flat tempora, about three-quarters as long as eye-diameter. Neck constriction only indicated. Microsculpture mesh pattern isodiametric laterally, almost indistinct on frons and vertex. Antennae in both sexes with antennomere 9 reaching the pronotal base, pubescent from apical third of antennomere 3 (there, except the normal setae, some fine short setae, sometimes hardly visible).

Pronotum (Fig. 11) transverse, widest at about anterior third, anterior lateral seta inserted a little before this, posterior seta in posterior angle. Anterior margin distinctly emarginate, anterior angles moderately projecting forward, somewhat rounded at tip. Sides slightly curved apicad, from widest point distinctly sinuate to the more or less rectangular posterior angles, in one female paratype the posterior angle even a little projecting laterally. Lateral furrows narrow, not explanate toward base and continuing at basal margin to the internal basal impression, then becoming obsolete. Base slightly sinuate. Disk only slightly convex, smooth, anterior transverse impression shallow, in one paratype only suggested, posterior transverse impression a little more distinct. Median line shallow, not reaching anterior margin, somewhat deepened at posterior transverse impression, obsolete toward base. Basal external impression sparsely punctured, shallow and short, of about two-third of length of internal one, in one paratype almost obsolete, without distinct punctures, internal one longitudinal with some distinct punctures. Microsculpture mesh pattern almost isodiametric, distinct only at sides, almost obsolete on disk, a little more strongly developed in females.

Prosternum (laterally), episterna and abdomen (laterally) with coarse and somewhat scattered irregular punctuation, the punctures on abdomen sometimes connected by shallow longitudinal ridges. Microsculpture mesh pattern almost isodiametric, distinct only laterally, on disk almost obsolete, a little more strongly developed in females. Metepisterna very short, only somewhat longer than wide, weakly narrowed toward posteriorly.

Elytra (Fig. 11) long-oval, moderately convex, maximum width a little behind middle. Striae fine, unpunctured, intervals slightly convex, interval 3 with two setigerous punctures adjoining stria 3, the first around the anterior fifth, the second around of apical third. Humerus well-marked with a small indistinct tooth, laterally not projecting. Basal margin anteriorly concave, forming an weak acute angle (holotype) or almost rectangular angle with lateral margin at the humerus. Scutellar setigerous puncture present at base of well-developed scutellary stria. Microsculpture mesh pattern distinct, in males weak transverse, in females isodiametric and only slightly more stronger developed. Last sternite with one seta on each side in males (holotype on right side with an additional anormal small pore puncture), with a pair of seta on each side in females.

Legs slender, relatively long, compared with other members of this group. Males with mesotibia not enlarged at internal margin in apical half, metatibia not distinctly curved, apically at internal margin without crenulation. Tarsi narrow, tarsomeres dorsally smooth, mesotarsomeres 1-3 and metatarsomeres 1-3 laterally furrowed. Protarsomeres 1-3 moderately enlarged in males.

Male with median lobe strongly bent at middle (as normal in *Orthomus*), not thickened at

middle, narrowed apicad and slightly reflexed in lateral view (Fig. 5a); apical lamella short and apically evenly rounded in dorsal view (Fig. 5b). Internal sac without thorns or teeth. Right paramere as in Fig. 5c.

C o m p a r i s o n s : The new species belongs to the group of species having the second (hind) setigerous puncture on elytra adjoining stria 3 (*O. maroccanus*, *O. tazekensis*, *O. rubicundus*, but differs with them in possessing a different pronotal shape (laterally distinctly sinuate before posterior angles, Fig. 11). The pronotum of *O. tazekensis* (Figs 12, 13), is as a rule, forward of the posterior angles, laterally slightly rounded, more seldom straight and only exceptionally very slightly sinuate, but the base is always much wider than in *O. starki* spec. nova, additionally the anterior angles are much more acute and more projecting forward. Also the internal sac of the median lobe of *O. tazekensis* (Figs 3a, 3b, 4a, 4b) is different in showing some groups of relatively big teeth unlike to the other species mentioned here, beside a different form of the median lobe itself. *O. maroccanus* has also some teeth in the internal sac (Figs 1a, 1b), but they are much smaller and the pronotum is laterally almost evenly rounded forward of the posterior angles (like in *O. rubicundus*). *O. rubicundus* has, like *O. starki* spec. nova, the internal sac of the median lobe without thorns or teeth (Figs 2a, 2b), but is distinguished by a different pronotal shape (Fig. 10, see also key).

For data on variation in some values of ratios see Table 1.

E t y m o l o g y : This interesting species is dedicated to our dear friend and colleague Werner Starke (Warendorf, Germany), who collected a part of the type series and whose company the first author enjoyed on wonderful and successful excursions to Spain and Morocco.

D i s t r i b u t i o n : Up to now only known from three localities, situated not far from each other in the north-western region of Taza (Morocco).

H a b i t a t : The specimens were collected in an area, characterized by agriculture and free of forests, at lower elevations (about 300 to 450 m). They have been found along field edges or on fallow land under stones. The locality ca. 5 km S Sebti-des-Beni-Frassen lies in a shallow river valley, the soil of the slopes on both sides of the small river was water logged clay. In case of the locality near Souk-El-Had-des-Oulad-Zbair the soil consists of loam, the fields are gently inclined to a valley bottom with a small creek, in both cases the soil was still extremely moist. The specimens from near the locality Had Msila were taken from under stones on sloping fallow ground.

***Orthomus tazekensis* (ANTOINE 1941)**

***Orthomus tazekensis tazekensis* (ANTOINE 1941)**

Platysma (*Orthomus*) *rubicundus* ssp. *tazekense* ANTOINE 1941: 411 (loc. typ.: "jbel Tazeka").

Orthomus rubicundus ssp. *tazekense*: MATEU 1954a: 360, part.

Orthomus rubicundus ssp. *tazekensis* : ANTOINE 1957: 209, part.

Orthomus tazekensis: MACHARD 1997: 19, part.

Orthomus (*Orthomus*) *rubicundus* ssp. *tazekensis*: BOUSQUET 2003: 477, part.

D i s t r i b u t i o n : Morocco, Moyen Atlas: Jbel Tazzeke (MACHARD 1997: 19).

M a t e r i a l : (6 exs.): Taza: N. Moyen Atlas, Jbel Tazzeke, top, 1800 m, 3.II.1998, Wrase leg. (1 ex., cWR); the same, but: ca 1900 m, ca 30 km SW Taza (cedar forest, under stones/wood)

7.II.2003, Wrase leg. (1 ex., cWR); the same, but: 34°05'N/04°11'W, W. Starke leg. (3 exs., cST). Jbel Tazzeke, 20 km SW Taza, 1650 m, 34°04' 15''N/ 04°10'50''W, 1650 m (Quercus), Ch. Bayer leg. (1 ex., cWR).

D i a g n o s i s : A species of average size for *Orthomus*, 7.3-9.7 mm, reddish brown, appendages somewhat lighter. Habitus see Fig. 12.

Antennae pubescent from apical third of antennomere 4, in rare cases with some fine, short setae at apex of antennomere 3. (Of a total of six specimens from the Jbel Tazzeke one with right antennomere 3 setose; the same phenomenon in the specimens from the Rif mountains: of a total of 66 specimens examined for this character three specimens with both antennomeres 3 setose and two specimens with left antennomere 3 setose).

Pronotum (Fig. 12) transverse with anterior angles strongly and acutely projecting forward, laterally, as a rule, forward of the posterior angles, slightly rounded, more seldom straight and only exceptionally very slightly sinuate, base very wide. Basal impressions smooth or only slightly and finely punctured, internal impression longitudinal, external impression small, shallow, often only indicated. Area between external impression and lateral margin weakly or not distinctly elevated, sometimes flat.

Prosternum more or less unpunctured or only with some weak superficial punctures, laterally indistinct rugose, pro-episterna unpunctured or only with some faint punctures, mes- and metepisterna and abdomen (laterally) faintly and irregularly punctured, the punctures on abdomen sometimes connected by shallow ridges in longitudinal direction.

Elytra (Fig. 12) moderately convex with striae fine, unpunctured, intervals slightly convex, interval 3 with 2 setigerous punctures adjoining stria 3. Humerus well-marked with big, distinct tooth, projecting laterally. Scutellary stria well-developed, without scutellar setigerous puncture (with rare exceptions, so ANTOINE 1941: 40 mentioned, that one of the three female types has a scutellar pore puncture, on which he founded the unavailable aberration name "scutellaris").

Elytral microsculpture mesh pattern indistinct, weakly impressed, in males weak transverse meshes, elytra very shiny, in females isodiametric and somewhat strongly developed, elytra somewhat dull.

Mesotibia of males not enlarged, metatibia not distinctly curved and crenulate at internal margin, crenulation strongly developed, starting at about beginning of apical half and consisting of about 8 tubercles.

Apical lamella of median lobe (Fig. 3b) apically evenly narrowed, in comparison to specimens from the Rif mountains longer and apically somewhat acute. Internal sac with some groups of middle-sized thorns (Figs 3a, 3b).

For identification see also key. For data on variation in some values of ratios see Table 1.

***Orthomus tazekensis rifensis* subsp. nova**

Orthomus rubicundus ssp. *tazekense*: MATEU 1954a: 360, part.

Orthomus rubicundus ssp. *tazekensis*: ANTOINE 1957: 209, part.

Orthomus tazekensis: MACHARD 1997: 19, part.

Orthomus (Orthomus) rubicundus ssp. *tazekensis*: BOUSQUET 2003: 477, part.

Type material: Holotypus ♂: "MOROCCO (Chefchaouen) Rif Mts., Bab-Besen, ca. 15 km NW Ketama, ca 1600 m (cedar forest, under stones and wood/leaf litter, sifted) 12./13.II.2003, D.W. Wrase (18a)" (cWR). Paratypes: 37♂♂, 17♀♀: with the same data as

holotype (cFACCH, cKH, cHZ, cSCHM, cSCHN, cSCHW, cWR, DEI, MNHUB, OÖL, OUMNH, ZISP); 4♂♂, 4♀♀: "MOROCCO (Chefchaouen) Rif Mts., Bab-Besen, ca. 15 km NW Ketama, plateau above cedar forest, ca. 1650 m (under stones and plants) 13.II.2003, D.W. Wrase (18c)" (cSCHW, cWR). 1♂: "Maroc bor. 2.-3.6.1998, Rif mts 1300 m.n.m. Bab Berred, T. Lackner lgt." (cWR). 1♂: "Marocco, 17.IX.1998, Ketama, Issaguen, 1800 m, leg. C. Reuter" (cREUT). 1♂: "Marocco, 19.IX.1998, 30 km west. Ketama, 1500 m, leg. C. Reuter" (cREUT). 1♂: "MOROCCO Rif Mts. 20 km W Bab-Berred, Cherafat, N35°03'36'' W 05°06'56'', 860 m (Steineiche, Pistac.) 26.II.2001, C. Bayer" (cWR). 4♂♂: "M. Tidiquin (Rif), 6.1963, A..Cobos leg." (cJNE). 4♂♂: "Rif: Ketama, 12-1970, J. Gourvès leg." (cJNE). 2♂♂: "Rif, Bab Berret, 1.5.1980, J. Gourvès leg." (cJNE). 3♂♂, 3♀♀: "MOROCCO (Chefchaouen) Rif Mts., Bab-Berred, ca 9 km W Bab-Besen, ca 1450 m 34°59.419'N/ 004°49.079'W (mixed forest with clearings, u. stones/wood /leaf litter, sifted) 28.II.2004 D.W. Wrase (17)" (cWR). 2♂♂, 2♀♀: with the same data, but: Th. Aßmann (cASM). 2♂♂, 2♀♀: with the same data, but: W Starke (9) (cST). 22♂♂, 14♀♀: "NW Morocco, Rif Mts., 1600 m BAB BERRET-KETAMA road, 34.56N/04.36W, Cedrus forest, J. Kaláb leg., 30.iv.-1.v.2002 (cKAL, cWR). 2♂♂, 1♀: "NW Morocco, Rif Mts., 1600 m BAB BERRET-KETAMA road, 34.56N/04.36W, Cedrus forest, J. Kaláb leg., 27.x.2002" (cKAL). 9♂♂, 2♀♀: "NW Morocco, Rif Mts., 1600 m BAB BERRET-KETAMA road, 34.56N/04.36W, Cedrus forest, J. Kaláb leg., 27.-28.xi.2002" (cKAL, cWR). 1♂, 1♀: "NW Morocco, Rif Mts., BAB BERRET, mixed forest, J. Kaláb leg., 28.xi.2002" (cKAL). 12♂♂, 9♀♀: "NW Morocco, Rif Mts., 1800 m BAB BERRET-KETAMA road, 34.58N/04.44W, Cedrus forest, J. Kaláb leg., 3.xi.2003" (cKAL, cWR). 3♂♂, 4♀♀: "Marokko R Mussard leg."/"Ketama 1600 m Rif Gebiet 9.-13.3.1961" (cHZ). 1♀: "Marokko R Mussard leg."/"Ketama (Rif) 1800 m; Nov. 1964" (cHZ). 2♂♂: "Marokko R Mussard leg."/"Djebel Outka Rif 1400 m April 1965" (cHZ). 15♂♂, 4♀♀: "Marocco (Rif): Issaguen n Ketama 1600 m, 5.IV.1991 Heinz leg." (cHZ, cWR). 2♂♂, 1♀: "Marocco (Rif): zw. Bab Berret u. Bab Taza ~ 850 m, 6.IV.1991 Heinz leg." (cHZ). 1♂, 4♀♀: "MOROCCO-N N of KETAMA RIF mts., 5.5.2003 leg. M. Halada" (cWR).

C o m p a r i s o n s : Differing from members of populations from the Jbel Tazzeke by having the elytra with scutellar pore puncture. (Of a total of 201 specimens seen only one specimen from Mt. Tidiquin lacks the right pore puncture). Crenulation of metatibia in males more weakly developed, starting somewhat before beginning of apical third and consisting of about 6 tubercles. Apical lamella of the median lobe shorter and apically almost evenly rounded (Figs 4a, 4b), right paramere as in specimens from the Jbel Tazzeke (Fig. 4c).

Interestingly, the body proportions between both sexes seem also to be different in members of both subspecies. While in populations from the Jbel Tazzeke the values for the ratios PW/PL and PW/HW are at the average lower and in PW/PBaW and EL/EW higher in males than in females, the same ratios have reciprocal values in populations from the Rif (PW/PL and PW/HW at the average higher and in PW/PBaW and EL/EW lower in males than in females, see Table 1). More material from the Jbel Tazzeke is necessary to confirm this statement.

For data on variation in some values of ratios see Table 1 (Body length in holotype 8.3 mm, width 3.6 mm).

N o t e : *O. tazekeensis* is, like the other species, apterous. It is an inhabitant of mountain forests from about 850 m to regions above the timber limit. In the region between Bab-Taza and Bab-Berret *O. tazekeensis rifensis* subspec. nova as well as *O. maroccanus* were collected together, according to the collecting labels, but it is probably safe to assume the latter does not reach the higher forests, where *O. tazekeensis rifensis* subspec. nova has its distribution center.

The forested regions of both the Jbel Tazzeke and the Rif are interrupted by a deep valley landscape without forests, dominated by agriculture and cut by a river (and where, at

least in the western part, another species, *O. starkei* spec. nova lives). It can be supposed, that this valley is an important barrier between both populations, which resulted obviously in an allopatric distribution, that it seems justified to conclude a separation for a very long time. Supported by differences in some characters the populations of the Rif forests warrant subspecific level.

E t y m o l o g y : The epithet refers to the Rif mountains, where the members of this subspecies live.

D i s t r i b u t i o n : Forested zones and regions above the timber limit of eastern to western Rif mountains.

Orthomus aquila (COQUEREL 1859)

Feronia (Argutor) aquila COQUEREL 1859: 768 (loc. typ.: "Algérie")

Feronia numida CHAUDOIR 1859: 119 (loc. typ.: "Algier").

Orthomus aquila (= *numida*): CHAUDOIR 1873: 110.

Platysma (Orthomus) aquilum: Bedel 1899: 194.

Pterostichus (Orthomus) aquila: SCHATZMAYR: 1942: 69.

Orthomus aquila ssp. *aquila*: MATEU 1954a: 358.

Orthomus (Orthomus) aquila: BOUSQUET 2003: 476

D i s t r i b u t i o n : Central to eastern part of northern Algeria (BEDEL 1899: 194; SCHATZMAYR 1942: 68; MATEU 1954a: 358)

M a t e r i a l : (88 exs.):

A l g e r i a : "Algeria" (1 ex., MNHUB). "Algerie (Bonvoul.)" (2 ex., cHEYD). "Algerie (Ott)" (2 exs., cHEYD). "Kabilya", Ancey leg. (10 exs., cHEYD, 1 ex., cWR). – **Algier:** "Algier" or "Algir" or "Alger" (11 exs., DEI; 8 exs., MNHUB); "Algier" (2 exs., syntypes of "*Feronia numida*" Chd., MNHN). "Alger, III 1886" (7 exs., MNHUB). Benj Messous, 16.I.1961, G. Tiberghien leg. (1 ex., cJNE). "Gouraya" (2 exs., DEI). "Cherchell Kobelt 84" (4 exs., cHEYD). Hussein Dey, 18.VII.1960, G. Tiberghien leg. (1 ex., cJNE). Keddara E Larba, 600 m, 10.III.1991, W. Heinz leg. (1 ex., cHZ). Trobard Taza nr. Alger, XI 1938, Laurent leg. (1 ex., cJNE). – **Annaba:** "Bône" (= Annaba, 1 ex., MNHUB). – **Bejaïa:** "Bougie [Bejaïa] Kobelt 84" (1 ex., cHEYD). – **Blida:** between Blida and Medea, 7.VIII.1884, Quedenfeldt leg. (2 exs., MNHUB). Atlas de Blida, Jbel Beni Kichnit, 4 km S Bougara, 800 m, IV 1986, B. Březina leg. (1 ex., cWR). Tipasa, VII 1960, G. Tiberghien leg. (1 ex., cJNE); the same, but: 12.XII.1971, J.L.d'Hondt leg. (1 ex., cJNE). – **Biskra:** El Kantara (3 exs., MNHUB). – **Bouira:** "Dra el Mizaa", Ancey leg. (1 ex., cHEYD). – **Chlef:** env. Khemis-Miliana (= Affreville), 26.V.1956, R. Guerroumi leg. (1 ex., cJNE). – **Tiaret:** Tissemsilt NE Tiaret, 1000 m, 14.III.1991, W. Heinz leg. (5 exs., cHZ). – **Tizi-Ouzou:** Azazga, 19.X.1920, H. Normand leg. (1 ex., cJNE). Tizi-Ouzou, forest d'Akfadou, 1000-1400 m, 16.IV.1988, G. Sama leg. (2 exs., cWR); the same, but: 21.IV.1988 (2 exs., cWR); the same, but: 7.VI.1980 (1 ex., cJNE). the same, but: 28.IV.1987, 1200 m, G. Magnani leg. (1 ex., cFACCH).

W r o n g l o c a l i t i e s : "N.W. Marocco, Quedenfeldt" (1 ex., MNHUB). "Hispania" (2 exs., DEI).

D i a g n o s i s : A species of average size for *Orthomus*, 7.1-9.1 mm, dark piceous, appendages only somewhat lighter. Antennae pubescent from antennomere 4. Habitus see Fig. 14.

Pronotum (Fig. 14) transverse, anterior angle of pronotum distinctly and somewhat acutely produced forward, slightly rounded at tip, laterally weakly rounded, almost parallel or even somewhat broadened before posterior angles, projecting mostly in a small acute tooth at obtuse posterior angle. Basal impressions smooth or only slightly and finely punctured, internal impression longitudinal, external impression shallow, often only

indicated. Area between external impression and lateral margin slightly elevated.

Prosternum unpunctured, episterna coarsely punctured and first abdominal sternites laterally with fine and scattered puncturation, the punctures on abdomen sometimes connected by shallow longitudinal ridges.

Elytra (Fig. 14) fairly flat, in males with interval 8 behind humeral tooth in males elevated, almost keel-like, abruptly and angled descending toward lateral margin, in females this feature is less distinct. Striae fine, unpunctured, intervals almost flat, interval 3 with 2 setigerous punctures, first adjoining stria 3, second adjoining stria 2. Humerus well-marked with small, distinct tooth, slightly projecting laterally. Scutellar setigerous puncture present at base of well-developed scutellary stria.

Elytral microsculpture mesh pattern in males moderately transverse, weakly impressed, elytra moderately shiny, in females microsculpture almost isodiametric, more strongly developed, surface somewhat dull.

Mesotibia of males not enlarged, metatibia not distinctly curved and only very slightly crenulate at internal margin.

Apical lamella of median lobe apically distinctly shifted to the left (Fig. 6b), internal sac (Figs 6a, 6b) without teeth or thorns.

For identification see also key. For data on variation in some values of ratios see Table 1.

Note: We saw two female syntypes of *Feronia numida* CHAUDOIR 1859, stored in the Chaudoir Collection in the MNHN (originally pinned, now glued to cards) and identified by the labels "numida Chaud". (hand written by Chaudoir on white label, one specimen) and "Museum Paris" (black print on white label, subsequently added, both specimens), now both specimens with added labels stating: "Syntype *Feronia numida* CHAUDOIR, 1859 Wrase labelled 2005", black print on red label, and: "*Orthomus aquila* (COQUEREL, 1859) WRASE det. 2005", black print on white label). The investigation revealed the same statement CHAUDOIR (1873: 110) already made himself, that *numida* is synonymous with *O. aquila* (COQUEREL). *Feronia numida* was founded on three specimens (in the description two males and one female were mentioned, coming from "Algier", but obviously one female was taken for a male by error, as both specimens seen were females).

***Orthomus achilles* spec. nova**

Type material: Holotype ♂: "ALGERIA – BEJAIA Aokas m 0 3/4/5 – IX – 1984 A. Casale leg." (cCAS). Paratype ♀: "C. BOUGIE [Bejaia] 5 – 1935 DR. NORMAND" (MNHUB).

Diagnosis: A species of average size for *Orthomus*, belonging to the species group having the second elytral pore puncture at stria 2. Habitus see Fig. 15.

Description: Body length 7.4 (holotype) - 7.7 mm (paratype); width 3.0 - 3.1 mm respectively.

Color: Dark piceous (holotype) or reddish piceous (paratype), appendages only somewhat lighter.

Head small, narrower than pronotum, covered with a very fine micropuncturation. Frontal furrows short, unpunctured and not deeply impressed. Eyes fairly flat with flat tempora, about three-quarters as long as eye-diameter. Neck constriction only indicated.

Microsculpture mesh pattern laterally isodiametric, almost indistinct on frons and vertex. Antennae in male with antennomere 9, in female with antennomere 8 reaching the pronotal base; pubescent from about apical half of antennomere 4.

Pronotum (Fig. 15) transverse, anterior angle of pronotum distinctly and somewhat acutely produced forward, slightly rounded at tip, laterally before posterior angles almost rectilinear (holotype) or rounded and slightly narrowed (paratype), posterior angles with projecting small tooth blunt and indistinct. Basal impressions only slightly and finely punctured (holotype) or almost smooth (paratype), internal one longitudinal, external one shallow. Area between external impression and lateral margin slightly elevated.

Prosternum unpunctured, episterna coarsely and first abdominal sternites laterally finely and scatterly punctured, the punctures on abdomen sometimes connected by shallow longitudinal ridges.

Elytra (Fig. 15) fairly flat, interval 8 behind humeral tooth in males and females moderately convex, slope toward lateral margin moderate. Striae fine, unpunctured, intervals almost flat, interval 3 with two setigerous punctures, first adjoining stria 3, second adjoining stria 2. Humerus well-marked with small, distinct tooth, slightly projecting laterally. Scutellar setigerous puncture present at base of well-developed scutellary stria.

Elytral microsculpture mesh pattern in males moderately transverse, weakly impressed, elytra moderately shiny, in females almost isodiametric, more strongly developed, surface somewhat dull.

Mesotibia of males not enlarged, metatibia not distinctly curved and only very slightly crenulate at internal margin.

Median lobe (Figs 8a, 8b) apicad not distinctly narrowed with apical lamella short and distinctly shifted to the left (in dorsal view), apically distinctly reflexed (in lateral view). Internal sac without teeth or thorns.

Comparisons: The new species belongs to the group of species having the second (hind) setigerous puncture on elytra adjoining stria 2 and with apical lamella of median lobe apically distinctly shifted to the left (*O. aquila*, *leprieuri*). While *O. leprieuri* has smooth sterna, *O. achilles* spec. nova is very similar to *O. aquila*, sharing with it the same puncturation of the sterna, but differs with it in interval 8 behind humeral tooth which is in both sexes only moderately convex, sloping moderately toward lateral margin, contrary to *O. aquila* which males have an almost keel-like elevated interval 8 behind humeral tooth, abruptly descent toward lateral margin. Additionally it has a different construction of the median lobe with the apical lamella distinctly shorter and a different folding pattern of its internal sac (compare Figs 6a, 6b with Figs 8a, 8b).

For data in some values of ratios see Table 1.

Etymology: Dedicated to our friend and colleague, the outstanding connoisseur of Carabidae Achille Casale (Sassari, Italy), who was lucky to find a male of this species.

Distribution: Up to now only known from the area of Bejaïa in eastern central Algeria (From Bejaïa also *O. aquila* is known).

***Orthomus leprieuri* PIC 1894**

Orthomus leprieuri PIC 1894: 104 (loc. typ.: "Mont Edough" [Massif de l'Edough, NW Annaba, Algeria])

Platysma (*Orthomus*) *leprieuri*: BEDEL 1899: 194.

Pterostichus (Orthomus) leprieuri: SCHATZMAYR: 1942: 68.

Orthomus aquila ssp. *leprieuri*: MATEU 1954a: 358.

Orthomus (Orthomus) leprieuri: BOUSQUET 2003: 477

Distribution: North-eastern Algeria, north-western Tunisia (BEDEL 1899: 194; SCHATZMAYR 1942: 68; MATEU 1954a: 358).

Material: (15 exs.):

Algeria: "Algier." (1 ex., DEI). - Annaba: "Bône" (= Annaba, 1 ex., DEI). "Bona Alg. Desbroch." (= Annaba, 2 exs., cHEYD).

Tunisia: Jendouba: Aïn Draham, V 1934, H. Normand leg. (1 ex., MNHUB); Aïn Draham, X 1948, R. Demoflys leg. (2 exs., cJNE); Les Chênes at Aïn Draham, 900 m, 2.III.1991, W. Heinz leg. (8 exs., cHZ, cWR).

Diagnosis: A species of average size for *Orthomus*, 7.3-8.8 mm, dark piceous, appendages only somewhat lighter. Antennae pubescent from antennomere 4. Habitus see Fig. 16.

Pronotum (Fig. 16) transverse, anterior angle only slightly produced forward, apically more rounded than in *O. aquila*, laterally rounded and slightly narrowed or parallel before posterior angle, projecting in a small acute tooth at obtuse posterior angle. Basal impressions smooth, internal one longitudinal, external one small, shallow, or only indicated. Area between external impression and lateral margin slightly elevated.

Elytra (Fig. 16) gently convex with interval 8 behind humerus convex, moderately curved toward lateral margin. Striae fine, unpunctured, intervals almost flat, interval 3 with two setigerous punctures, first adjoining stria 3, second adjoining stria 2. Humerus well-marked with small, distinct tooth, slightly projecting laterally. Scutellar setigerous puncture present at base of well-developed scutellary stria.

Elytral microsculpture mesh pattern in males strongly transverse, somewhat superficial, elytra strongly shiny, in females with meshes also strongly transverse, only a little more strongly developed than in males, surface somewhat shiny and iridescent.

Prosternum and pro- and met-episternum and abdominal sternites unpunctured, only mes-episternum laterally with some single punctures.

Mesotibia of males not enlarged, metatibia not distinctly curved, not or only very slightly crenulate at internal margin.

Apical lamella of median lobe (Fig. 7b) apically distinctly shifted to the left, internal sac (Figs 7a, 7b) without teeth or thorns.

For identification see also key. For data on variation in some values of ratios see Table 1.

Note: Described as separate species, it was partly treated as subspecies of *O. aquila* by later authors (see MATEU 1954a: 359), but the differences in external morphology, though the form of median lobe is very similar, make it evident, that both taxa are distinct species, more so as they live in the same areas in north-eastern Algeria. (The inaccuracy of the labels of the investigated material does not allow the decision, if they also live in the same biotopes).

Zusammenfassung

Orthomus starkei spec. nova (locus typicus: Morocco, Provinz Taza: ca 5 km S Sebti-des-Beni-Frassèn, 30 km NW Taza, 34.20N/04.22W), *Orthomus tazekensis rifensis* subspec. nova (locus

typicus: Morocco, Provinz Chefchaouen: Rif Mts., Bab-Besen, ca. 15 km NW Ketama, ca. 1600 m) und *Orthomus achilles* spec. nova (locus typicus: Algeria, Wilaya Bejaïa: Aokas, 20 km SÖ Bejaï) werden beschrieben. Neben der Differentialdiagnose zu den Arten aus Nordafrika und dem südlichsten Andalusien, die sich durch flache Augen und Schläfen und durch Metepisternen auszeichnen, die etwa so lang oder nur wenig länger als am Vorderand breit sind und sich nach hinten nur wenig verschmälern: *O. maroccanus* CHAUDOIR, 1873, *O. rubicundus* (COQUEREL 1859), *O. aquila* (COQUEREL 1859), *O. leprieuri* PIC 1894 und *O. tazekensis* (ANTOINE 1941) wird ein Schlüssel zur Unterscheidung der Arten präsentiert. Die Fundorte des untersuchten Materials werden aufgelistet. Außerdem werden Abbildungen des Habitus und der Medianlobi der hier besprochenen Arten und eine Tafel mit einigen Index-Werten gegeben.

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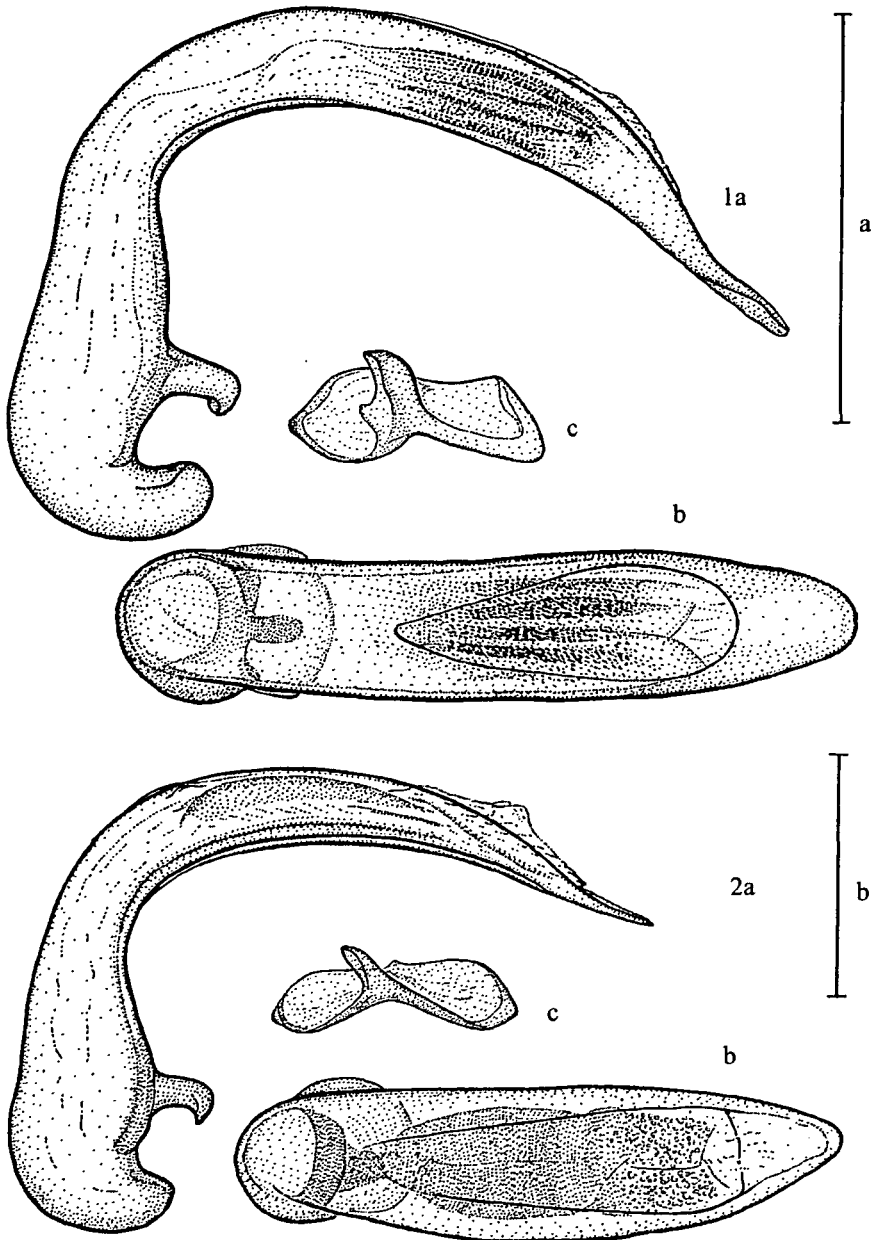
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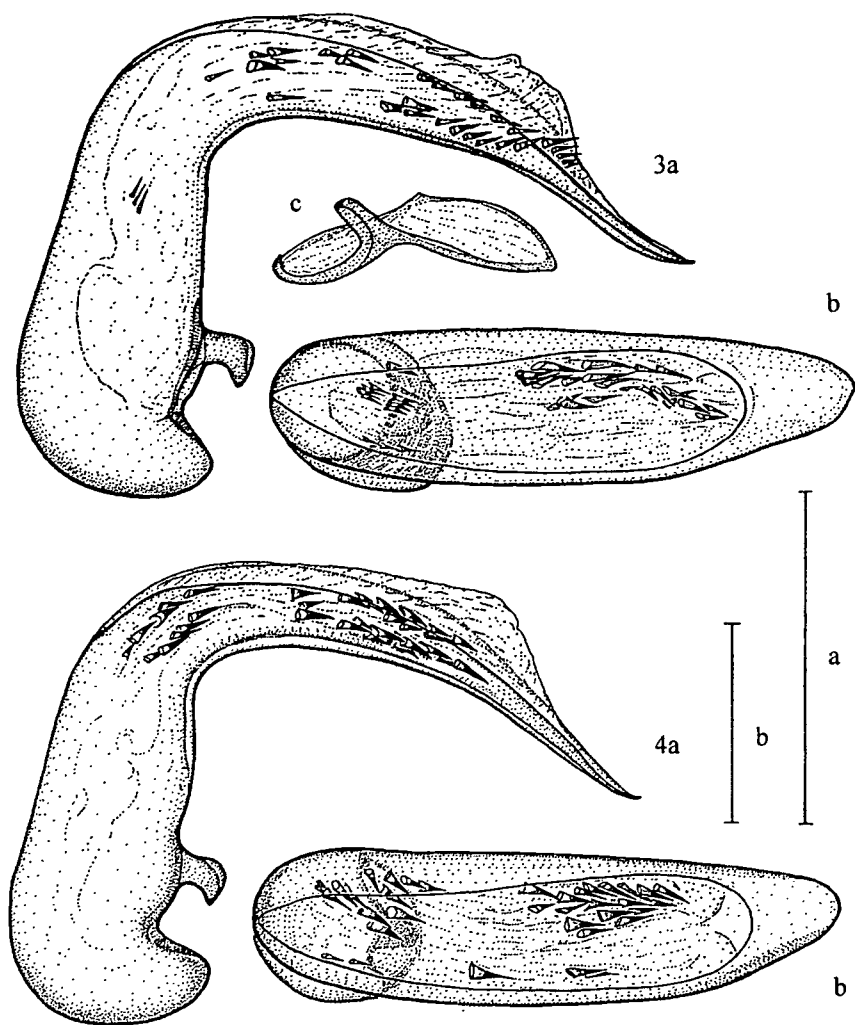
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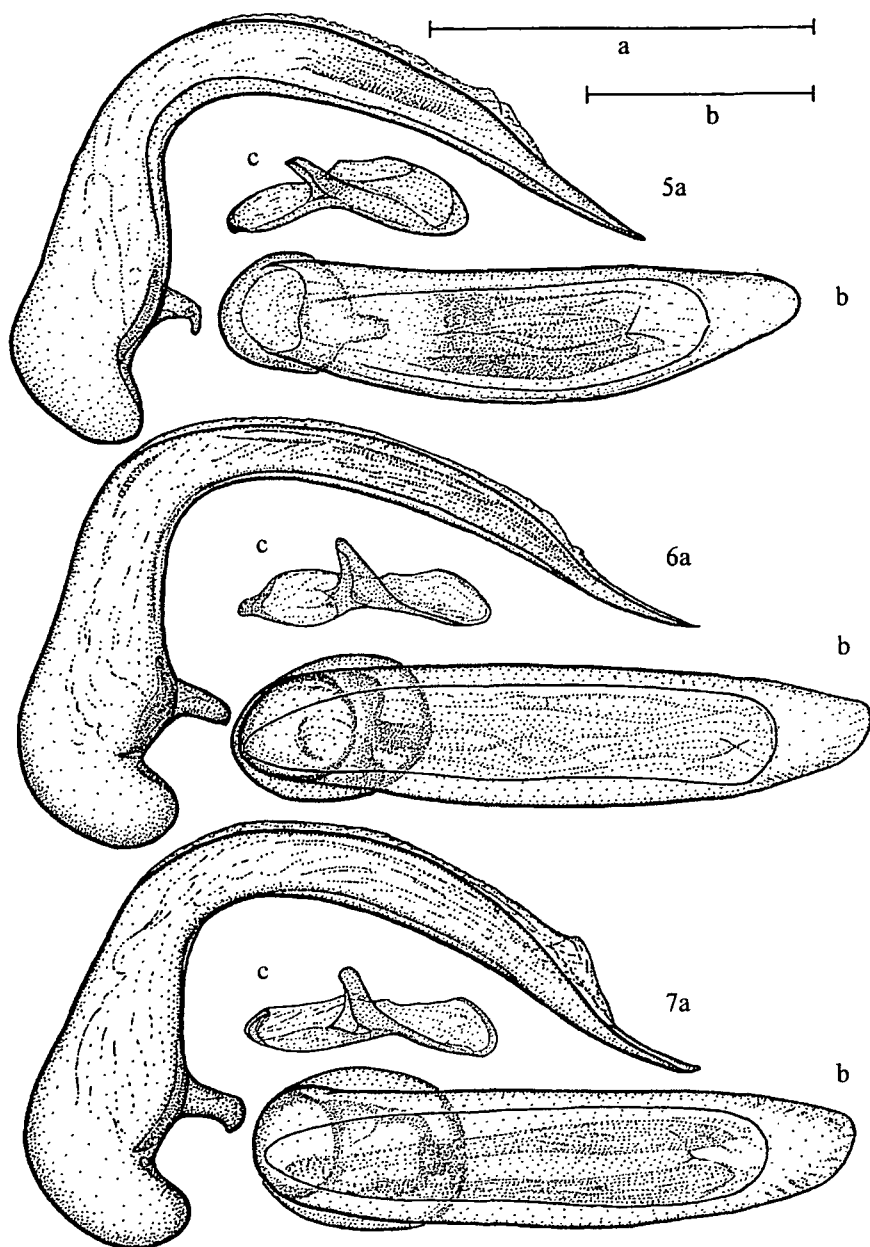
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Figs 1-2: Median lobe, right paramere. **a** - Median lobe, lateral, **b** - Median lobe, dorsal, **c** - right paramere. *Orthomus maroccanus* (CHD.) (a: Souk-el-Arba-des-Beni-Hassan, b, c: 2 km W Tetouan). (1). *O. rubicundus* (COQU.) (a, b, c: Bouficha) (2). Scale bars: a: 0.8 mm, b: 0.6. mm. Scale bar a: median lobe; b: paramere; also in figs 3-8.



Figs 3-4: Median lobe, right paramere. a - Median lobe, lateral, b - dorsal, c - right paramere. *Orthomus tazekensis tazekensis* (ANT.) (a, b, c: Jbel Tazzeke) (3). *O. tazekensis rifensis* subsp. nova (a, b: paratype, Bab Besen) (4). Scale bars: a: 0.8 mm, b: 0.6. mm.



Figs 5-7: Median lobe, right paramere. a - Median lobe, lateral, b - Median lobe, dorsal, c - right paramere. *Orthomus starkei* spec. nova. (a: paratype, Sebt-des-Beni-Frassèn, b, c: holotype) (5). *O. aquila* (COQU.) (a, b, c: Algier) (6). *O. lepriuri* (PIC) (a, b, c: Annaba) (7). Scale bars: a: 0.8 mm, b: 0.6. mm .

896

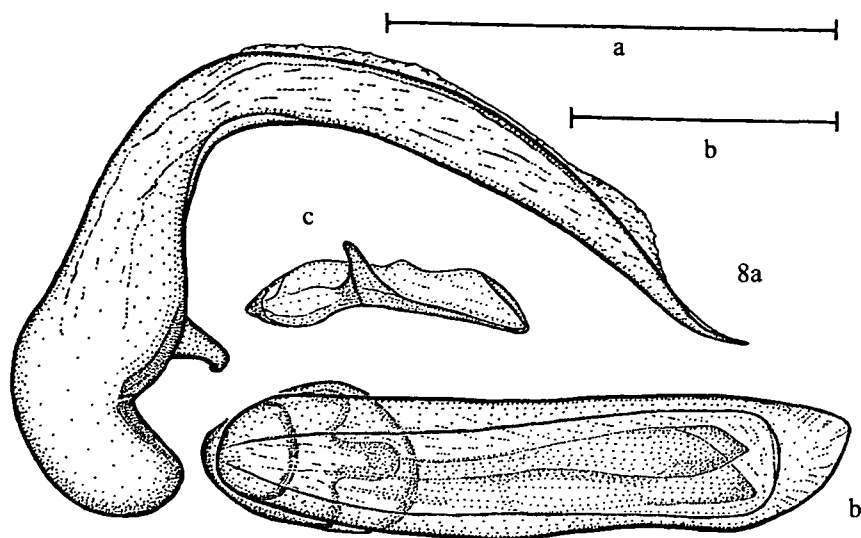
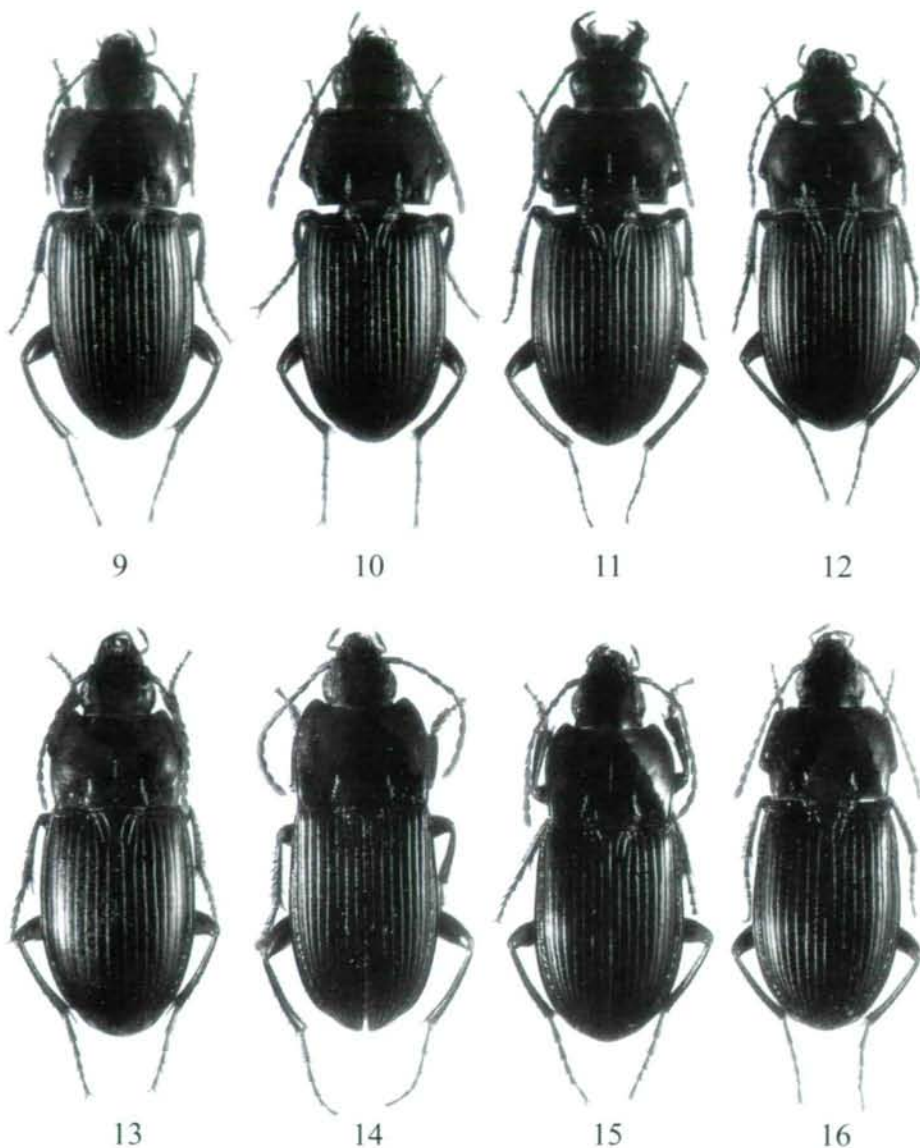


Fig. 8: Median lobe, right paramere. *Orthomus achilles* spec. nova (holotype). a- Median lobe, lateral, b- Median lobe, dorsal, c- right paramere. Scale bars: a: 0.8 mm, b: 0.6. mm.



Figs 9-16: Habitus. *Orthomus maroccanus* (CHD.) (Souk-el-Arba-des-Beni-Hassan) (9). *O. rubicundus* (COQU.) (Hammamet, El Besbassia) (10). *O. starkei* spec. nova (paratype, Souk-el-Had-des-Oulad-Zbaïr) (11). *O. tazeckensis tazeckensis* (ANT.) (Jbel Tazzecka) (12). *O. tazeckensis rifensis* subspec. nova (paratype, Bab-Besen) (13). *O. aquila* (COQU.) (Algier) (14). *O. achilles* spec. nova (holotype) (15). *O. leprieuri* (PIC) (Ain-Draham) (16).

Table 1. Data on variation in some values among *Orthomus* species

taxon	sex	n	BL/mm	PW/PL	Ø	PW/HW	Ø	PW/PBaW	Ø	EL/EW	Ø
<i>maroccanus</i> (Morocco)	♂	5	8.3-8.9	1.32-1.36	1.34	1.71-1.78	1.74	1.08-1.12	1.10	1.44-1.56	1.48
<i>maroccanus</i> (Morocco)	♀	5	8.4-9.8	1.39-1.46	1.42	1.72-1.78	1.75	1.08-1.13	1.11	1.46-1.48	1.47
<i>maroccanus</i> (Spain)	♂	5	8.0-8.1	1.32-1.36	1.34	1.71-1.75	1.73	1.08-1.12	1.09	1.52-1.54	1.53
<i>maroccanus</i> (Spain)	♀	5	8.4-8.9	1.37-1.44	1.40	1.70-1.72	1.70	1.09-1.12	1.11	1.44-1.52	1.48
<i>tazekensis tazekensis</i>	♂	3	8.7-9.0	1.46-1.50	1.47	1.80-1.83	1.81	1.07-1.09	1.08	1.42-1.47	1.45
<i>tazekensis tazekensis</i>	♀	3	8.8-9.7	1.49-1.53	1.51	1.81-1.85	1.82	1.07-1.08	1.07	1.41-1.43	1.42
<i>tazekensis rifensis</i>	♂	5	7.3-8.9	1.44-1.53	1.49	1.74-1.86	1.79	1.05-1.07	1.06	1.43-1.47	1.44
<i>tazekensis rifensis</i>	♀	5	8.2-8.8	1.40-1.50	1.46	1.73-1.80	1.77	1.04-1.08	1.07	1.45-1.47	1.46
<i>tazekensis rifensis</i> (HT)	♂	1	8.3	1.44	-	1.74	-	1.05	-	1.43	-
<i>starkei</i>	♂	5	7.7-8.3	1.38-1.45	1.40	1.57-1.65	1.62	1.12-1.16	1.14	1.47-1.52	1.49
<i>starkei</i>	♀	5	8.8-9.2	1.40-1.45	1.42	1.64-1.68	1.66	1.12-1.17	1.15	1.44-1.47	1.47
<i>starkei</i> (HT)	♂	1	7.8	1.40	-	1.64	-	1.16	-	1.52	-
<i>rubicundus</i>	♂	5	7.0-7.8	1.40-1.45	1.42	1.58-1.65	1.61	1.10-1.18	1.15	1.46-1.51	1.50
<i>rubicundus</i>	♀	5	7.8-8.6	1.40-1.47	1.43	1.60-1.63	1.61	1.10-1.26	1.15	1.46-1.50	1.48
<i>aquila</i>	♂	5	7.1-8.8	1.36-1.41	1.39	1.73-1.82	1.79	1.03-1.05	1.04	1.46-1.50	1.48
<i>aquila</i>	♀	5	7.7-9.1	1.34-1.40	1.35	1.76-1.80	1.78	1.03-1.06	1.04	1.43-1.49	1.45
<i>leprieuri</i>	♂	5	7.3-8.4	1.32-1.41	1.38	1.73-1.78	1.76	1.04-1.06	1.05	1.42-1.48	1.44
<i>leprieuri</i>	♀	5	8.0-9.3	1.34-1.43	1.37	1.68-1.77	1.73	1.04-1.06	1.05	1.33-1.44	1.40
<i>achilles</i> (HT)	♂	1	7.5	1.38	-	1.74	-	1.09	-	1.37	-
<i>achilles</i> (PT)	♀	1	7.7	1.47	-	1.79	-	1.09	-	1.38	-